

REMARKS/DISCUSSION OF ISSUES

Claims 18-24 and 26-32 are pending in the application.

Reexamination and reconsideration are respectfully requested.

35 U.S.C. §§ 102 & 103

The Office Action rejects: claims 18-22, 24, 29 and 31 under 35 U.S.C. § 102 over Wilson U.S. patent 6,337,215 ("Wilson"); claims 18-24 and 31 under 35 U.S.C. § 102 over Baselt et al., 13 *Biosensors and Bioelectronics*, pp. 731-739 (1998) ("Baselt"); claims 26 and 28 under 35 U.S.C. § 103 over Wilson or Baselt in view of Summerton U.S. Patent 6,060,246 ("Summerton") and claims 27, 30 & 32 under 35 U.S.C. § 103 over Wilson or Baselt in view of Mirkin U.S. Patent 6,984,491 ("Mirkin").

Applicant respectfully traverses those rejections for at least the following reasons.

Wilson

Claim 18

Among other things, the tool of claim 18 includes means for acting on the first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths.

The FINAL Office Action does not cite anything in Wilson which mentions any means for acting on first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths.

Applicant respectfully submits that Wilson does not disclose any means for acting on the first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths.

Response to Response to Arguments

In the Response to Arguments, the FINAL Office Action states:

“The present claims recite that the means . . . is a magnetic field generator.”

(emphasis added).

Applicant respectfully disagrees. Claim 18 recites “**comprising at least a magnetic field generator.**” For example, in one exemplary embodiment, the first particles are magnetic and are attached to the first microbiological entities, and the second particles are magnetic and are not coupled to any microbiological entities, and a magnetic field generator operates in junction with the second particles to exert a force on the first particles that will cause weakly bound (e.g., non-specifically bound) pairs of first and second microbiological entities to separate, while not disrupting strongly bound (e.g., specifically bound) pairs of first and second microbiological entities. In this case, the magnetic field must be selected together with the magnetic moments of the first and second particles so that weakly bound (e.g., non-specifically bound) pairs of first and second microbiological entities separate, while strongly bound (e.g., specifically bound) pairs of first and second microbiological entities are not disrupted (see, e.g., page 18, lines 2-9).

Please note that this is by way of exemplary explanation, and is not attempting to import unrecited features into the claims. For example, the specification teaches another embodiment which also includes a flow of a liquid by means of source 12, valve 3, and pump 13 which operate together with a magnetic field for acting on the particles to cause the particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths. And the specification includes yet another embodiment where first particles are attached to target molecules and second beads are attached to the capture molecule. Numerous embodiments are described, but what they all share – and what is recited in claim 18 – are means for acting on the first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths, the means for acting on the first and second particles comprising at least a magnetic field generator.

Accordingly, it is **not true** that any magnetic field generator in Wilson will inherently comprise means for acting on the first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths.

Indeed, in Wilson the magnetic field generator does not act on the first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths. In Wilson, the first particles are attached to first acceptor molecules and the second particles are attached to second acceptor molecules. The first and second acceptor molecules are not bound together, and so there is no “bindings between” them and they can not correspond to the first and second microbiological entities of claim 18. Indeed, the FINAL Office Action does not state what in Wilson is supposed to correspond to the first and second microbiological entities of claim 18. However, if it is supposed that the first and second microbiological entities correspond to any of the bound pairs in Wilson, it is apparent that Wilson does not teach any means for acting on the first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities of such a bound pair to distinguish between bindings of different strengths, and that Wilson’s magnetic field generator would not accomplish this.

Accordingly, for at least these reasons, Applicant respectfully submits that claim 18 is patentable over Wilson.

Claims 19-22, 24, 29 and 31

Claims 19-22, 24, 29 and 31 depend from claim 18 and are deemed patentable over Wilson for at least the reasons set forth above with respect to claim 18, and for various novel features recited therein.

For example, claims 20 and 29 each recite that the first particles are coupled to the first microbiological entities, and the second particles are coupled to the second microbiological entities which are themselves bound to the first

microbiological entities. Applicant respectfully submits that Wilson does not disclose or suggest this.

The FINAL Office Action fails to acknowledge or address this argument which was plainly presented in the response to the first Office Action in this case. Indeed, the FINAL Office Action does not mention or examine the features of claims 20 and 29 at all with respect to Wilson, or explain how or why it is believed that Wilson discloses these features. **Applicant respectfully requests a full, fair, and complete examination of claims 20 and 29 and an explanation as to why it is believed that Wilson discloses each and every feature of claims 20 and 29, or else the rejections of claims 20 and 29 over Wilson should be withdrawn.**

With respect to claim 31, the FINAL Office Action states without any evidence or support that “*Wilson uses the same magnetic field generator for applying a magnetic field as is claimed in*” claim 31. Applicant respectfully traverses this. Wilson mentions a magnetic field generator. Applicant does not see anything in Wilson that says that it uses **the same** magnetic field generator as is claimed in claim 31. **Applicant respectfully requests that the Examiner either explain how or why it is known that Wilson uses the same magnetic field generator for applying a magnetic field as is claimed in claim 31, or else withdraw the rejection of claim 31 over Wilson.**

Baselt

Claim 18

Among other things, the tool of claim 18 includes means for acting on the first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths.

The FINAL Office Action states that “[s]ince *Baselt teaches that multi-analytes are detected or screened, there must be more than one types (sic) of magnetic particles.*”

Applicant respectfully submits that Baselt does not disclose any means for acting on first and second particles to cause the first and second particles to exert a

mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths. Applicant does not concede that Baselt actually discloses first and second particles, but even if it did, according to the FINAL Office Action the first and second particles would pertain to different analytes. In that case, Baselt does not disclose acting on first and second particles **to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities** to distinguish between the bindings of different strengths.

Response to Response to Arguments

In similarity to the explanation provided above with respect to Wilson: (1) Claim 18 recites “**comprising** *at least a magnetic field generator*” – not **is** a magnetic field generator; (2) it is **not true** that a magnetic field generator will inherently comprise means for acting on the first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths; (3) if it is supposed that the first and second microbiological entities correspond to any of the various bound pairs in Baselt, it is apparent that Baselt does not teach any means for acting on the first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths; and (4) Baselt’s magnetic field generator would not accomplish this.

Accordingly, for at least these reasons, Applicant respectfully submits that claim 18 is patentable over Baselt.

Claims 19-24 and 31

Claims 19-24 and 31 depend from claim 18 and are deemed patentable over Baselt for at least the reasons set forth above with respect to claim 18, and for various novel features recited therein.

For example, claim 20 recites that the first particles are coupled to the first microbiological entities, and the second particles are coupled to the second microbiological entities which are bound to the first microbiological entities. Applicant

respectfully submits that Baselt does not disclose or suggest this.

The FINAL Office Action fails to acknowledge or address this argument which was plainly presented in the response to the first Office Action in this case. Indeed, the FINAL Office Action does not mention or examine the features of claim 20 at all with respect to Baselt, or explain how or why it is believed that Baselt discloses these features. **Applicant respectfully requests a full, fair, and complete examination of claim 20 and an explanation as to why it is believed that Baselt discloses each and every feature of claim 20, or else the rejection of claim 20 over Baselt should be withdrawn.**

With respect to claim 31, the FINAL Office Action states without any evidence or support that “*Baselt uses the same magnetic field generator for applying a magnetic field as is claimed in*” claim 31. Applicant respectfully traverses this. Baselt mentions a magnetic field generator. Applicant does not see anything in Baselt that says that it uses **the same** magnetic field generator as is claimed in claim 31. **Applicant respectfully requests that the Examiner either explain how or why it is known that Baselt uses the same magnetic field generator for applying a magnetic field as is claimed in claim 31, or else withdraw the rejection of claim 31 over Baselt.**

Claims 26 & 28

Claims 26 and 28 depend from claim 18. Summerton does not remedy the deficiencies of Wilson and Baselt as set forth above with respect to claim 18 and therefore claims 26 and 28 are deemed to be patentable for at least the reasons set forth above with respect to claim 18, and for the following additional reasons.

Claims 26 and 28 recite second particles which are not coupled to any biological entities and which also are acted upon by means (including at least one magnetic field generator) to cause such second particles, together with first particles, to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths.

The FINAL Office Action states that Summerton discloses particles which are not coupled to any biological entities to be used as control particles. However,

neither Summerton, nor Wilson, nor Baselt, nor any combination thereof discloses particles which are not coupled to any biological entities and which also are acted upon by means (including at least one magnetic field generator) to cause such second particles, together with first particles, to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths.

Accordingly, for at least these additional reasons, Applicant respectfully submits that claims 26 and 28 are patentable over the cited art.

Claims 27, 30 and 32

Claims 27, 30 and 32 depend from claim 18. Mirkin does not remedy the deficiencies of Wilson and Baselt as set forth above with respect to claim 18 and therefore claims 27, 30 and 32 are deemed to be patentable for at least the reasons set forth above with respect to claim 18.

CONCLUSION

In view of the foregoing explanations, Applicant respectfully requests that the Examiner reconsider and reexamine the present application, allow claims 18-24 and 26-32 and pass the application to issue. In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact Kenneth D. Springer (Reg. No. 39,843) at (571) 283.0720 to discuss these matters.

Respectfully submitted,

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